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Regional Hospital Collaboration and Outcomes in Medicare Heart Failure Patients

See You in 7

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ABSTRACT

OBJECTIVES The objective of this study was to evaluate an interhospital collaborative approach to improve 7-day post-discharge follow-up (7dFU) rates and reduce 30-day readmissions in heart failure (HF) patients.

BACKGROUND Early post-discharge follow-up after HF hospitalization is associated with lower 30-day readmission rates.

METHODS Observational analyses of Medicare HF patients discharged from 10 collaborating hospitals (CH) participating in the Southeast Michigan See You in 7 Collaborative were carried out. We compared pre-intervention (May 1, 2011 to April 30, 2012) and intervention (May 1, 2012 to April 30, 2013) 7dFU rates, unadjusted 30-day readmissions, risk-standardized 30-day readmissions (RSRR), and Medicare payments in CH and Michigan nonparticipating hospitals (NPH).

RESULTS 7dFU rates increased but remained low in both groups (CH: 31.1% to 34.4%; $p < 0.001$; NPH: 30.2% to 32.6%; $p < 0.001$). During the intervention period, unadjusted readmissions decreased significantly in both groups (CH: 29.0% to 27.3%; $p < 0.001$; NPH: 26.4% to 25.8%, $p = 0.004$); mean RSRR decreased more in CH than in NPH (CH: 31.1% to 28.5%; $p < 0.001$; NPH: 26.7% to 26.1%, $p = 0.02$; $p = 0.015$ for intergroup comparisons). Findings were similar when CH outcomes were matched 1:1 with similar NPH outcomes. Combined Medicare payments for inpatient and 30 days of post-discharge care decreased by $182 in CH and by $63 in NPH (per eligible HF discharge).

CONCLUSIONS See You in 7 Collaborative participation was associated with significantly lower 30-day readmissions and Medicare payments in HF patients. Increases in 7dFU were modest, but associated processes aimed at this goal may have improved the transition from inpatient to outpatient care. Regional hospital collaboration to share best practices could potentially reduce HF readmissions and associated costs. (J Am Coll Cardiol HF 2015;3:765–73)

Heart failure (HF) affects more than 5 million adults and is the leading cause of hospitalizations among those 65 years of age and older in the United States (1). For patients hospitalized with HF, readmissions following hospital discharge are common and can indicate health care inefficiencies (2,3). The Medicare Payment Advisory Commission estimates that preventable readmissions account for at least $12 billion of Medicare annual spending (3,4). Approximately 50% of readmissions are possibly or probably preventable (5), with potentially remediable factors including inadequate transitions from inpatient to outpatient care (3). To address these issues, the American College of Cardiology and the Institute for Healthcare Improvement launched the national Hospital-to-Home Initiative in 2009.

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ABBREVIATIONS AND ACRONYMS

CH = collaborating hospitals

HF = heart failure

NPH = nonparticipating hospitals

RIR = relative improvement ratio

RSRR = risk-standardized 30-day readmission rate

Hospital-to-Home aimed to reduce 30-day, all-cause, risk-standardized readmission rates for patients discharged with HF or acute myocardial infarction by creating a rapid learning community where experts and clinical providers at multiple levels of care shared best practices (6). One area of focus for Hospital-to-Home is promoting early post-discharge outpatient follow-up, which is associated with lower risk for 30-day readmissions in HF patients (7).

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In 2011, the Greater Detroit Area Health Council, the American College of Cardiology's Michigan Chapter, the Michigan Peer Review Organization (Michigan's Quality Improvement Organization), and 11 previously nonaffiliated hospitals teamed up to establish the Southeast Michigan See You in 7 (SY7) Collaborative, with the common goals of increasing 7-day post-discharge follow-up and reducing all-cause 30-day readmission rates in HF patients (7). In this study, we examined the relationship between SY7 Collaborative participation and rates of 7-day follow-up and 30-day readmissions in Medicare fee-for-service HF patients discharged from collaborating hospitals (CH) and compared these findings to statewide trends in the remaining 82 Michigan nonparticipating hospitals (NPH).

METHODS

HOSPITAL RECRUITMENT AND GROUP DEFINITIONS. In 2011, the Greater Detroit Area Health Council conducted open recruitment of hospitals in Southeast Michigan for the SY7 Collaborative by using recruitment letters, teleconferences, and scheduled face-to-face meetings with stakeholders to discuss the expectations of the project. As a result, 11 urban and suburban acute care hospitals, including large teaching (n = 7), large nonteaching (n = 3), and medium urban (n = 1) hospitals, enrolled in the year-long program. A large Veterans Affairs teaching hospital participated in the collaborative activities, but because comparable data outcomes could not be obtained through the Michigan Peer Review Organization, only nonfederal hospitals were included in this analysis. Michigan Peer Review Organization privately provided CH with quarterly 7-day follow-up and 30-day readmission data. Each institution was de-identified, and only aggregate data were reported to participants.

INTERVENTION AND INTENDED IMPROVEMENT. The intervention period was divided into 3 phases over a period of 1 year: pre-implementation (May 1, 2012, through July 31, 2012), test-intervention (August 1, 2012, through January 31, 2013), and evaluation (February 1, 2013, through April 30, 2013). **Table 1** shows the timeframes, scheduled activities for the collaborative, and the evaluation plan. Over the 12-month intervention period, See You in 7 Collaborative activities included quarterly face-to-face meetings and several telephone conferences/webinars, and participating hospitals submitted a total of 8 assignments for review and discussion.

During the pre-implementation phase, CH reviewed baseline data, conducted "gap analysis," identified process improvement measurements, and selected strategies from the Hospital-to-Home See You in 7 toolkit (6). During the test-intervention period, on the basis of hospital-specific gap analysis, each collaborating hospital selected 1 or several of the 7 care process goals (**Table 1**) from the toolkit to focus efforts and measure progress. Once these metrics were identified, CH conducted gap analyses of their current care processes to identify areas of need and then designed and implemented institution-specific quality improvement plans. During the evaluation phase, CH continued implementation of quality improvement processes and received feedback from Michigan Peer Review Organization on 7-day follow-up and 30-day readmissions. Further information on See You in 7 structure is provided in Online Table 1 and in a recently published paper describing the Collaborative's process (8).

Specified evaluation metrics for the See You in 7 Collaborative consisted of changes between the pre-intervention (May 1, 2011, through April 30, 2012) and the intervention (May 1, 2012, through April 30, 2013) periods in 7-day follow-up and unadjusted 30-day readmission rates for HF patients discharged from CH. Preliminary results for these metrics have recently been reported (8). For the current study, we also calculated and examined changes in mean risk-standardized 30-day all-cause readmission rates (RSRR) and then evaluated differences in these rates among CH, NPH, and matched NPH (see below for information on matching). We also compared unadjusted 30-day readmission rates and mean RSRRs for patients with and without 7-day follow-up visits.

OUTCOME DEFINITIONS AND DATA ACQUISITION. We linked Medicare fee-for-service standard analytic inpatient and enrollment files to outpatient claims by using beneficiary health insurance identification codes to identify eligible discharges, determine 7-day follow-up rates, and calculate all-cause 30-day readmission rates for the period May 1, 2011, through April 30, 2013. Eligible discharges were